CLAIMS

1. Method for fractional crystallisation of an at most partially solidified molten metal, in which a layer of at most partially solidified molten metal having an upper surface and a lower surface is divided into a series of compartments communicating with each other, in which the metal is stirred in at least some of the compartments, and in which crystals formed and/or existing in the layer of metal are selectively transported in a predetermined direction and molten metal is selectively transported in the opposite direction.

2. Method according to claim 1, in which a temperature difference is present over the length of the layer of metal, the higher temperature being present at the end of the metal layer to which the crystals are transported.

3. Method according to claim 1 or 2, in which the compartments in the layer of metal are formed by compartment walls that are present in pairs, the compartment walls of each pair being preferably placed adjacent to each other, one wall extending towards and adjacent to the lower surface of the layer of metal and the other wall extending from the lower surface of the layer of metal towards the upper surface of the layer of metal.

4. Method according to claim 1 or 2, in which the compartments in the layer of metal are formed by compartment walls that are present in pairs, the compartment walls of each pair being preferably placed adjacent to each other, one wall extending from the upper surface of the layer of metal towards the lower surface of the layer of metal and the other wall extending towards and adjacent to the upper surface of the layer of metal.

5. Method according to claim 1 or 2, in which a layer of transporting liquid is present below and/or above the layer of metal to selectively transport the crystals, and in which the compartments in the layer of metal are formed by

compartment walls extending towards and adjacent to the layer of transporting liquid transporting the crystals, preferably the transporting liquid being a molten salt.

6. Method according to claim 1 or 2, in which the layer of metal is present in a chamber having an inclined bottom, and in which the compartments in the layer of metal are formed by compartment walls extending towards and adjacent to the bottom of the chamber.

7. Method according to claim 1 or 2, in which the layer of metal is present in a chamber having an inclined upper wall, and in which the compartments in the layer of metal are formed by compartment walls extending towards and adjacent to the upper wall of the chamber.

8. Method according to any one of the claims 3 - 7, in which the compartment walls are adjustable such that the ends of the compartment walls are placed nearer to or further from the surface of the layer of metal they extend towards.

9. Method according to any one of the preceding claims, in which mixing means are present to stir the metal in at least some of the compartments, the mixing velocity of the mixing means being variable.

10. Method according to any one of the preceding claims, in which molten metal and/or crystals are removed at the end of the layer of metal towards which the crystals are selectively transported.

11. Method according to any one of the preceding claims, in which the metal used is aluminium.

12. Method according to claim 11, for removing one or more of the elements Cu, Fe, Ga, Mg, Mn, B, Si, Sn, Zn, and Ni from the aluminium.